

ABSTRACT OF THE DISCLOSURE

A silent chain power transmission apparatus comprises an endless silent chain and a sprocket. The chain includes link plates each having teeth profiled by inside and outside tooth faces. The inside tooth faces are identical to tooth profiles arranged axially of a hob cutter for forming teeth of the sprocket. The inside and outside tooth faces are formed to satisfy $H_i = H_o + H_s$, where H_i is a distance from a pin center line L_p , passing over the centers of pins interconnecting the link plates, to a pitch line L_i of the inside tooth faces, H_o is a distance from the pin center line to a pitch line L_o of the outside tooth faces, and H_s is an amplitude of polygonal motion of the chain. Each link plate also has a concave bottom surface defined between the teeth thereof at a position where its interference with edges of the involute teeth, arising owing to the chain polygonal motion amplitude when the outside tooth faces are brought into meshing engagement with the involute teeth and get seated thereon, can be avoided.